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Title

Machine learning from weak supervision: Towards accurate classification with low labeling costs

Abstract

Recent advances in machine learning with big labeled data allow us to achieve human-level performance in various tasks such as speech recognition, image understanding, and natural language translation.

However, there are still many application domains---including neuroscience---where human labor is unavoidable in the data acquisition process and thus the use of massive labeled data is prohibited.   In this lecture, I will introduce recent advances in classification techniques from weak supervision, including classification from positive and unlabeled data, classification from positive-confidence data, classification from pairwise similar and unlabeled data, and classification from complementarily labeled data.

Earlier materials are available from
http://goo.gl/meiTwY
https://www.youtube.com/watch?v=Jtg8OMPJF4o

Biography

Masashi Sugiyama received the PhD degree in Computer Science from Tokyo Institute of Technology, Japan in 2001. He has been Professor at the University of Tokyo since 2014 and concurrently appointed as Director of RIKEN Center for Advanced Intelligence Project in 2016.

His research interests include theory, algorithms, and applications of machine

learning. He served as a Program co-chair and General co-chair of the Neural Information Processing Systems conference in 2015 and 2016, respectively. Masashi Sugiyama received the Japan Society for the Promotion of Science Award and the Japan Academy Medal in 2017.